

SILANTYEVA, N. I.

USSR/Chemistry - Crystallization

Gard 1/1 Pub. 151 - 5/36

Authors : Gorshteyn, G. I., and Silantyeva, N. I.

Title : Distribution of isomorphous and isodimorphous components between solid and liquid phases during crystallization with aqueous solutions. Part 2.- Equilibrium in certain systems with binary schoenite salt components

Periodical : Zhur. ob. khim. 24/1, 29-36, Jan 1954

Abstract : The equilibrium of $\text{CoSO}_4(\text{NH}_4)_2\text{SO}_4 - \text{NiSO}_4(\text{NH}_4)_2\text{SO}_4 - \text{H}_2\text{O}$, $\text{CoSO}_4(\text{NH}_4)_2\text{SO}_4 - \text{FeSO}_4(\text{NH}_4)_2\text{SO}_4 - \text{H}_2\text{O}$ and $\text{FeSO}_4(\text{NH}_4)_2\text{SO}_4 - \text{NiSO}_4(\text{NH}_4)_2\text{SO}_4 - \text{H}_2\text{O}$ system, was investigated at 0 and 20° respectively. At 20° the first two systems were found to be perfectly ideal in the entire range of concentrations of both isomorphous components. The equilibrium values of the component distribution coefficients were established for several binary salt systems. Data on the characteristics of the third systems are included. Three references: 1-USA and 2-USSR (1933-1953). Tables; graphs.

Institution : ...

Submitted : June 8, 1953

Silantyeva, N.I.

USSR/Chemistry - 1953

Card 1 /1 Doc. 001 - 1/1

Authors : Gorshteyn, G. I., and Silantyeva, N. I.

Title : Distribution of isomorphous and isodimorphous components between solid and liquid phases during crystallization in aqueous solutions. Part 3.- Equilibrium in the $\text{Co}(\text{NO}_3)_2$ - $\text{Ni}(\text{NO}_3)_2$ - H_2O system at 20° .

Periodical : Zhur. ob. khim. 24/2, 201-203, Feb 1954

Abstract : Experiments were conducted to determine the equilibrium in a $\text{Co}(\text{NO}_3)_2$ - $\text{Ni}(\text{NO}_3)_2$ - H_2O system at 20° . The results obtained are tabulated. It was found that the components of the system are isodimorphous at the above mentioned temperature and two series of solid solutions are being formed in the system. It was established that the system remains ideal in each of the two zones of existence of a solid solution of specific structure. Three references: 2-USSR and 1-USA (1953 and 1954). Table; graphs.

Institution: Scientific Research Institute of Chemical Reagents

Submitted : June 8, 1953

USSR/Thermodynamics. Thermochemistry. Equilibria. Physico-Chemical B-8
Analysis. Phase Transitions

Abs Jour : Ref Zhur - Khimiya, No 8, 1957, 26160

Author : G.I. Gorshteyn, N.I. Silant'yeva

Title : Study of Distribution Regularities of Isomorphous Components
at Crystallization from Aqueous Solutions with Application
of Radioactive Indicators. I. Study of Equilibrium in
System Copper-Ammonium Sulfate - Zinc - Ammonium Sulfate -
Water with Application of Radioactive Isotopes Zn^{65} and Cu^{64}

Orig Pub : Zh. obshch. khimii, 26, No 7, 11821 - 11826 - 19-17

Abstract : The equilibrium distribution of components between the so-
lid and the liquid phases in the system $CuSO_4 \cdot (NH_4)_2SO_4 -$
 $ZnSO_4 \cdot (NH_4)_2SO_4 - H_2O$ was investigated with the application
of radioactive indicators Zn^{65} and Cu^{64} . The equilibrium
relative to both these salts was achieved in a thermostat
stirring the solution energetically at 20 and 25°. Contra-
rily to data obtained earlier (Hill and other, J.Amer. Che.
Soc., 1938, 60, 1099), it was established that the above

Card : 1/2

USSR/Thermodynamics. Thermochemistry. Equilibria. Physico-Chemical B-8
Analysis. Phase Transitions

Abs Jour : Ref Zhur - Khimiya, No 8, 1957, 26160

system was ideal in the whole range of concentrations of both the isomorphous components. The magnitude of the equilibrium factor of the distribution of the zinc salt in reference to the copper salt $D_{Zn/Cu}$ is constant both in case of microconcentrations, as well as in case of macroconcentrations of the zinc salt and is 2.43.

Card : 2/2

AUTHORS: Silant'yeva, N. I., and Gorshteyn, G. I.

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TITLE: Study of the Laws Governing the Distribution of Isomorphous Components during Crystallization from Aqueous Solutions with the Application of Radioactive Indicators. Part 2. Study of the Distribution of Components in the $\text{FeSO}_4 \cdot (\text{NH}_4)_2\text{SO}_4 \cdot 6\text{H}_2\text{O}$ - $\text{ZnSO}_4 \cdot (\text{NH}_4)_2\text{SO}_4 \cdot 6\text{H}_2\text{O}$ System with the Application of the Radioactive Zn^{65} Indicator. (Issledovaniye zakonmernostey raspredeleniya izomorfnykh komponentov pri kristallizatsii iz vodnykh rastvorov s primeneniym radioaktivnykh indikatorov. II. Issledovaniye raspredeleniya komponentov v sisteme $\text{FeSO}_4 \cdot (\text{NH}_4)_2\text{SO}_4 \cdot 6\text{H}_2\text{O}$ - $\text{ZnSO}_4 \cdot (\text{NH}_4)_2\text{SO}_4 \cdot 6\text{H}_2\text{O}$ s primeneniym radioaktivnogo indikatora Zn^{65} .)

PERIODICAL: Zhurnal Obshchey Khimii, 1957, Vol. 27, No. 1, pp. 14-19 (U.S.S.R.)

ABSTRACT: Experiments were conducted at 0, 10, 20 and 30° with the radioactive Zn^{65} indicator to study the equilibrium distribution of Zn micro-concentrations during the crystallization of a binary ferric and ammonium sulfate. The $\text{FeSO}_4 \cdot (\text{NH}_4)_2\text{SO}_4 \cdot 6\text{H}_2\text{O}$ content in the crystal and solutions was determined by titration with a 0.1 n. potassium permanganate solution. The results given in Table 1 show that the magnitude of the equilibrium distribution coefficient

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of the Zn mixture existing during the crystallization of $\text{FeSO}_4 \cdot (\text{NH}_4)_2\text{SO}_4 \cdot 6\text{H}_2\text{O}$ varies little with temperature. The change is 4.7 at 0° , 5.0 at 10° , 4.3 at 20° and 30° .

The factors determining the entrapment of the admixtures during polythermal crystallization are explained as: the relative supersaturation of the solution at each moment of crystallization and the degree of crystallization of the basic substance toward the conclusion of the crystallization process. The presence of two wide ideality zones at the boundaries of the equilibrium diagram was established. The relation between the mean practical distribution coefficient of the micro-component was established for instances where the value of the practical differential distribution coefficient remains almost unchanged in the crystallization temperature range. The experimental results were

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in conformity with theoretical data. The degree of concentration of Zn admixtures in solid phase and its reduction in the mother liquor during polythermal crystallization of $\text{FeSO}_4 \cdot (\text{NH}_4)_2\text{SO}_4 \cdot 6\text{H}_2\text{O}$ from aqueous solutions were calculated under conditions identical to industrial processes.

Two tables, 2 graphs. There are 8 references, of which 7 are Slavic.

ASSOCIATION: Institute of Chemical Reagents (Institut Khimicheskikh Reaktivov)

PRESENTED BY:

SUBMITTED: May 20, 1955

AVAILABLE:

Card 3/3

GORSHENIN, G. I. and SILANT'YENVA, N. I. (USSR)

"The Use of Radioactive Isotopes in Crystallization and Precipitation Methods of Dealing With Problems of Purification of Inorganic Salts"

Isotopes and Radiation in Chemistry, Collection of Papers of 2nd All-Union Sci. Tech. Conf. on Use of Radioactive and Stable Isotopes and Radiation in National Economy and Science, Moscow, Izd-vo AN SSSR, 1958, 380pp.

This volume publishes the reports of the Chemistry Section of the 2nd All-Union Sci. Tech. Conf. on Use of Radioactive and Stable Isotopes and Radiation in Science and the National Economy, sponsored by Acad. Sci. USSR and Main Admin for Utilization of Atomic Energy under Council of Ministers USSR, Moscow, 4-12 April 1957.

GORSHTEYN, G. I.; SILANT'YEVA, N.I.; Prinimala uchastiye: KIFAROVA, I.A.

Distribution of the isomorphic components during crystallization
from aqueous solutions. Report No. 3: Study of the system
 $(\text{NH}_4)_2\text{Co}(\text{SO}_4)_2 \cdot 6\text{H}_2\text{O} - \text{H}_2\text{O}$ with the use of radioactive tracers.
Trudy IREA no. 22:3-7 '58. (MIRA 14:6)
(Cobalt compounds)
(Crystallization)

GORSHTEN, G.I.; SILANT'YEVA, N.I.; Primala uchastiye: KIFAROVA, I.A.

Distribution of the isomorphic components during crystallization
from aqueous solutions. Report No. 5: Study of the system
 $\text{FeSO}_4 - \text{ZnSO}_4 - \text{H}_2\text{O}$ with the use of radioactive tracers.
Trudy IREA no. 22:12-17 '58. (MIRA 14:6)

(Iron sulfate)

(Zinc sulfate)

(Crystallization)

SILANT'YEVA, N. I.: Master Chem Sci (diss) -- "Experimental investigation of the laws of distribution of isomorphic components in certain water-salt systems". Moscow, 1959. 15 pp (Acad Sci USSR, Inst of Geochem and Analytic Chem im V. I. Vernadskiy), 160 copies (KL, No 16, 1959, 106)

ANKINOVICH, Ye.A.; SILANT'YEVA, N.I.

Gorceixite from vanadium-bearing clay-anthraxolite schists of
Kazakhstan. Izv. AN Kazakh. SSR. Ser. geol. no.3:78-81 '59.
(MIRA 13:12)

(Kazakhstan--Gorceixite)

SKVORTSOVA, K.V.; KOPCHENOVA, Ye.V.; SILANT'YEVA, N.I.; SIDORENKO, G.A.;
DARA, A.D.

Conditions governing the formation of umohoite in uranium-molybdenum
deposits of the U.S.S.R. Geol.rud.mestorozh. no.5:53-63 S.O '61.
(MIRA 14:9)

(Umohoite)

KOPCHENOVA, Ye.V.; SKVORTSOVA, K.V.; SILANT'YEVA, N.I.; SIDORENKO, G.A.;
MIKHAYLOVA, L.V.

Mourite, a new supergene uranium-molybdenum mineral. Zap. Vses.
min. ob-va 91 no.1:66-71 '62. (MIRA 15:3)
(Mourite)

SKVORTSOVA, K.V.; SIDORENKO, G.A.; DARA, A.D.; SILANT'YEVA, N.I.; MEDOYEVA, M.M.

Yemolite, a new molybdenum sulfide. Zap. Vses. min. ob-va 93
no. 48436-443 '64. (MIRA 18:2)

VASSERMAN, I.M.; SILANT'YEVA, N.I.

Preparation of dicalcium phosphate of stoichiometric composition.
Zhur. neorg. khim. 10 no.6:1320-1327 Je '65.

(MIRA 18:6)

43291

S/135/62/000/012/001/015
A006/A101

1,2380

AUTHORS: Nikiforov, G. D., Candidate of Technical Sciences, Silant'yeva,
S. A., Engineer

TITLE: Nucleation and development of pores in welding AMr6 (AMg6) alloy

PERIODICAL: Svarochnoye proizvodstvo, no. 12, 1962, 1 - 5

TEXT: Information is given on results of investigating pore formation in welding beads onto AMg6 alloy plates with a wire of the same material and of pure aluminum. It was found that pores are formed in welding the AMg6 alloy, as a result of a developed interaction between the liquid metal and the moisture, contained in the particles of the oxide film; these particles are present in the welding pool when the base and filler metal have melted. At a greater thickness of the oxide film, the effect of moisture may be inhibited until completed crystallization stages. Then, besides pores of regular shape, which have partially floated up to the surface, cavities of irregular, branched shape are formed as a result of displacement of eutectic by liberated hydrogen. Bulging of the metal in weld adjacent zones and the appearance of cracks in the joints,

C Card 1/2

NIKIFOROV, G.D., kand.tekhn.nauk; SILANT'YEVA, S.A., inzh.; KAINOVA,
G.Ye., inzh.

Measures to control porcsities in welding the AMg6 alloy. Svar.
proizv. no.1:26-29 Ja '63. (MIRA 16:2)

1. Moskovskiy aviatsionnyy tekhnologicheskyy institut.
(Aluminum-manganese alloys--Welding)

PODRABINEK, P.A.; SILANT'YEVA, S.M.

Evaluation of Valdman's cup endothelial test (concerning the article of K.V.Istomina and V.A.Neiman published in "Laboratornoe Delo", no.6, 1959). Lab. delo 7 no.3:26-27 Mr '61. (MIRA 14:3)

1. Istomkinskaya bol'nitsa (glavnyy vrach D.D.Przhedetskiy), Noginsk.
(LEUCOCYTOSIS) (RHEUMATIC FEVER)

GOL'DBERG, O.D., kand.tekhn.nauk; SILANT'YEVA, T.I., inzh.

Reliability of electrical equipment. Elektrotehnika
36 no.12:58 D '65. (MIRA 1961)

SILANT'YEVA, V. A.

"Skeletal Changes in a Child's Stump During the Growth Period." Cand
Med Sci, Gor'kiy Medical Inst, Gor'kiy, 1953. (RZhBiol, No 5, Nov 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher
Educational Institutions (11)

SO: Sum. No. 521, 2 Jun 55

SILANT'YEVA, V.A.

Significance of osteoplastic method of amputation in children.
Khirurgia no.4:47-52 Ap '54. (MLRA 7:6)

1. Iz kafedry operativnoy khirurgii i topograficheskoy anatomii
(i.o. zav. kafedroy dotsent V.P.Aratskiy, nauchnyy rukovoditel'
prof. V.M.Durmashkin) Gor'kovskogo meditsinskogo instituta imeni
S.M.Kirova.

(AMPUTATION,
*osteoplastic technic in child)

L 3555-66 EWT(m)/EWP(j) RM

ACCESSION NR: AP5024402

UR/0286/65/000/015/0081/0081

AUTHORS: Borodkin, V. F.; Semenova, T. S.; Silant'yeva, V. G.

TITLE: A method for obtaining colored polystyrole, Class 39, No. 173410

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 15, 1965, 81

TOPIC TAGS: polystyrole, polymer, styrole, monomer, acryl

ABSTRACT: This Author Certificate presents a method for obtaining colored polystyrole by polymerizing styrole in the presence of a pigment containing an active group instrumental in the formation of chemical union between the pigment and the monomer in the process of polymerization. To broaden the assortment of materials for dying polystyrole, pigments of the acrylic active group are used.

ASSOCIATION: Ivanovskiy khimiko-tekhnologicheskij institut (Ivanovo Institute of Chemical Engineering)

SUBMITTED: 05Jun64

ENCL: 00

SUB CODE: 00, *be*

NO REF SOV: 000

OTHER: 000

Card 1/1 *mer*

AFANAS'YEVA, Ye.Yu.; SILANT'YEVA, Ye.A.; FINOGENOV, S.N.

Evaluation of acute cerebrocranial injury according to data from heat, plethysmographic, and electrocardiographic tests. Vop.neiro-khir. 19 no.2:39-47 Mr-Apr '55. (MLRA 8:7)

1. Iz Instituta neyrokhirurgii Ministerstva zdavookhraneniya USSR.
(HEAD, wounds and injuries,
ECG, heat test & plethysmography in)
(ELECTROCARDIOGRAPHY, in various diseases,
head inj.)
(PLETHYSMOGRAPHY, in various diseases,
head inj.)
(WOUNDS AND INJURIES,
head, ECG, heat test & plethysmography in)

SILANT'YEVA, Ye.A.

Functional state of the cardiovascular system in nonpenetrating
craniocerebral injuries under clinical and experimental
conditions [with summary in English]. *Fiziol.zhur.* [Ukr.] 3 no.2:
60-68 Mr-Apr '57. (MLRA 10:6)

1. Ukraine'kiy naukovo-doslidnyy institut neyrokhirurgii.
(CARDIOVASCULAR SYSTEM)
(BRAIN--WOUNDS AND INJURIES)

SILANT'YEVA, Ye.A., Dend Fed Sci—(diss) "Functional state of
the cardio-vascular system in a closed cerebro-cranial trauma in
the clinic and in an experiment." Kiev, 1958. 12 pp (Kiev Order of
Labor Red Banner State Med Inst in Acad A.A. Bogomolets), 200 copies
(H, 22-58, 115)

786-

BAYEVA, I.Ye.; SILANT'YEVA, Ye.V.; GAZAL'YAN, S.I.; KRASKOVA, N.I.; SHAYKHULINA, N.N.; SINEL'NIKOV, N.A.

Use of a decoction of *Alhagi camelorum* for the treatment of dysentery. Zdrav.Turk. 3 no.3:46-48 My-Je '59. (MIRA 12:11)

1. Iz kafedry mikrobiologii (sav. - dotsent A.I.Koval'chuk) Turkmenskogo meditsinskogo gosudarstvennogo instituta im. I.V. Stalina i infektsionnoy bol'nitsy Leninskogo rayona Ashkhabada (glavnyy vrach - I.Ye.Bayeva).

(DYSENTERY)

(ALHAGI CAMELORUM--THERAPEUTIC USE)

SILANT'YEVA, Z.M.

MD ✓ Effect of different concentrations of caffeine and adrenaline on the cardiac and respiratory systems and the interrelation of these drugs in rabbits. V. A. Pegel, Z. M. Silant'eva, and K. A. Lukovskaya. *Trudy Tomsk. Univ.* 123, 129-59(1963); *Referat. Zhur., Khim.* 1954, No. 41-642. —The optimal dose of caffeine (I) for rabbits is 1.5 ml of a 5-6% soln.; the optimal dose of adrenaline (II) seems to be the concn. of II which is normally found in blood. Interrelation between I and II in the effect on the cardiac and respiratory systems of the organism is discussed.

B. Wierzbicki

(2)

SILAR, Frantisek, inz.

Possibility of increasing the mechanization in measuring points
of the field for technical economic mapping. Geod kart obzor 10
no.9/10:213-216 0 '64

SILAR, Frantisek, inz.

The MOM Te-1 coordinate theodolite. Geod kart obzor 11 no.3:
68-69 Mr '00.

1. Research Institute of Geodesy, Topography, and Cartography,
Prague.

L 10232-66 T DJ

ACC NR: AP6004790

SOURCE CODE: CZ/0024/65/000/002/0048/0049

AUTHOR: Silar, Frantisek (Engineer)

ORG: Research Institute of Geodesy, Topography and Cartography, Prague (Vyzkumny
ustav geodeticky, topograficky a kartograficky)

TITLE: Mechanized hydraulic drill

SOURCE: Geodeticky a kartograficky obzor, no. 2, 1965, 48-49

TOPIC TAGS: hydraulic equipment, engineering machinery

ABSTRACT: The article briefly describes a completely mechanized hydraulic drill
designed in Czechoslovakia; it weighs about 1000 kg and is intended to be mounted
on a truck. Orig. art. has: 2 figures. [JPRS]

SUB CODE: 13 / SUBM DATE: non;

HW
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UDC: 528.015

SILAR, Franklin, Jr.

Swingline rail. Gold heart shape 10 1/2 x 1 1/2 in. 165.

1. Research Institute of Geology, Topography, and Cartography,
Prague.

SILAR, J.

"Determination of the planned structure of a herd of cattle in the long-range as well as annual plans." P. 279

SBORNIK. RADA ZEMEDELSKA EKONOMIKA. Praha, Czechoslovakia; Vol. 32, No. 4, April, 1959

Monthly list of East European Accession Index (EEAI), Library of Congress, Vol. 8, No.7, July, 1959

Unclas

• CZECHOSLOVAKIA/Cosmochemistry - Geochemistry - Hydrochemistry. D.

Abs Jour : Ref Zhur - Khimiya, No 9, 1958, 28324

Author : Silar, J.

Inst :

Title :

Hydrogeological Conditions at the Sulfur Springs in
Velke Losinach in Moravia.

Orig Pub : Univ carolina Geol, 2, No 1, 25-43 (1956) (in Czech with
summaries in German and Russian)

Abstract : It appears that in Czechoslovakia resorts have been es-
tablished at most of that country's mineral springs.
The oldest of these resorts is that of Velke Losinach in
Moravia where hydrogeologic work has been done on a num-
ber of projects designed to assure a more rational utili-
zation of the mineral waters. The sulfurous low-mineral
springs of Velke Losinach are the only mineral springs
in the Czech massif containing a larger percentage of
 H_2S and H_2SiO_3 . The mineral content of the waters is

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CZECHOSLOVAKIA/Cosmochemistry. Geochemistry. Hydrochemistry.

D.

Abs Jour : Ref Zhur - Khimiya, No 9, 1958, 28324

250-310 mg/kg; the temperature of the two warm springs Elishka and Maria is 27°, while the temperature of the cold springs Karel and Maria Theresia is 10.7°. The resort is situated on the alluvial cone of the Desna River in Northern Moravia. The mineral springs are related to the complex of metamorphic rocks of the Vysokiy Esenik which is complicated by tectonic folds. The sulfur springs are interstitial waters which come to the surface along a four-kilom, stretch of the river valley. At the resort the flow of the commercially exploited warm springs is 118 liters/min. The flow of the cold springs is insignificant. The chemical composition of the cold and of the warm springs is identical. The mineral waters reach the surface from a depth of about 1,000 m in connection with the discharge [sic] in the overlying alluvial deposits [TN: sentence appears garbled]. Earlier it was thought that the H₂S in the water is of

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SILAR, J.; NAPRSTEK, V.

A contribution to the stratigraphy and facial evolution of the Cretaceous
near Neratovice and Labem. p. 137.
(Casopis Pro Mineralogii A Geologii, Vol. 2, no. 2, 1957. Praha, Czechoslovakia)

SO: Monthly List of East European Accessions (EEAL) IC, Vol. 6, no. 10, October 1957. Uncl.

CZECHOSLOVAKIA/Cosmochemistry. Geochemistry. Hydrochemistry.

D.

Abs Jour : Ref Zhur - Khimiya, No 2, 1959, 4241

Author : Silar, J.

Inst :

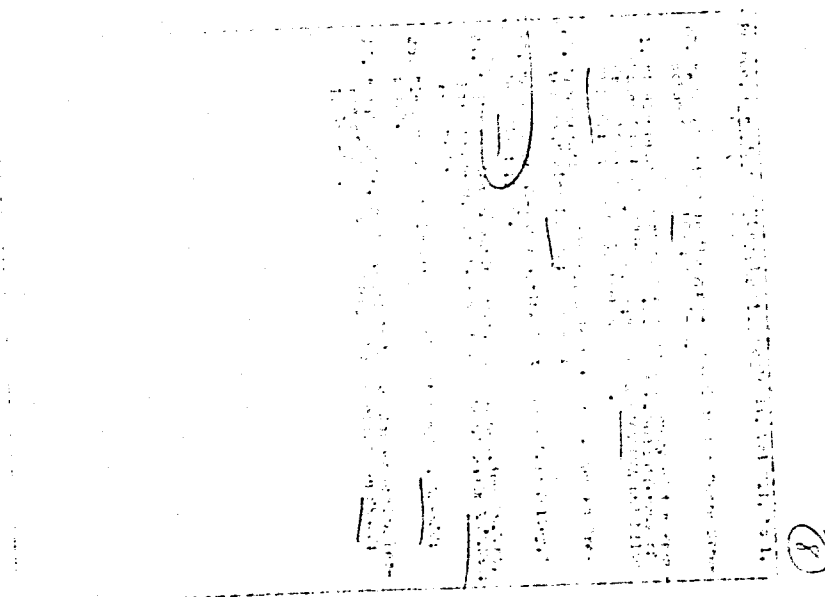
Title : On the Presence of Alkali Chloride Mineral Waters in the Banks of the Reservoir on the Vach River in the Nositsa.

Orig Pub : Casop Mineral a Geol. 2, No 4, 422-436 (1957) (In Czech with a German summary)

Abstract : During the construction of the dam on the Vach River in Nositsa near Pukhova in Western Slovakia, a number of sources of an alkali chloride mineral spring rich in I were discovered. One liter of water contains (in mg/liter): Na + K, 3337; Ca, 272; Mg, 151; Cl, 710; SO_4 , 30.5; HCO_3 , 9113.4; free CO_2 , 2640. The temperature of the water is 9.5°. In view of the aggressiveness of these waters, hydrogeological investigations were undertaken and it was shown that a lowering of the water table was feasible.- V. Konshin

Card 1/1

SILAR JAN.



SHAR, Jan

Contribution to the information on the development of mineral
spring systems. Sbor geol ved 1:59-74 '64.

1. Chair of Hydrogeology and Engineering Geology, Faculty
of Natural Sciences, Charles University, Prague.

SILAR, Josef, inz.

Symposium on industrial fertilizers. Vest ust zemedel 10 no.8:
293-299 '63.

1. Ustredni vyzkumny ustav rostlinne vyroby, Praha - Ruzyně.

SILAR, J.

Direction scintillation detector and its application in medicine.

P. 25, (Jaderna Energie) Vol. 3, no. 1, Jan. 1957, Prada, Czechoslovakia

SO: Monthly Index of East European Acessions (EEAI) Vol. 6, No. 11 November 1957

SILAR, Josef

Direction scintillation detector and its use in medicine. Jaderna energie 3 no.1:25-29 Ja '57.

1. Vyzkumny ustav pro elektrotechnickou fysiku, Praha.

SILAR, Josef

Detection of alpha particles by a scintillation detector.
Jaderna energie 3 no.7:211-215 J1 '57

1. Vyzkumny ustav pro elektrotechnickou fysiku, Praha.

Silar, J.

CZECHOSLOVAKIA/Electronics - Photocells and Semiconductor Devices H-8

Abs Jour : Ref Zhur - Fizika, No 10, 1958, No 23382

Author : Silar Josef, Novakova Olga

Inst : Higher Institute on Electrotechnical Physics, Prague, Czechoslovakia

Title : Study of the Integral and Local Sensitivity of Photocathodes and their Influence on the Horizontal Portion of the Characteristic of a Scintillation Detector.

Orig Pub : Ceskosl. cesop. fys., 1957, 7, No 5, 582-589

Abstract : Results are reported on the measurement of the integral sensitivity, sensitivity in the blue region of the spectrum (so-called "blue" sensitivity), the dependence of the output current on the position of the light probe on the cathode for photomultiplier types RCA-5819, FEU-19 (new and old models), and photomultiplier 61 FK 411 of Czechoslovak make. An investigation was made of the influence of the above parameters on the shape of the curve that represents the dependence of the number of pulses per minute on the voltage

Card : 1/2

CZECHOSLOVAKIA/Nuclear Physics - Installations and Instruments.
Methods of Measurement and Research.

Ass Jour : Ref Zhur - Fizika, No 6, 1959, 1227⁴

Author : Silar, Josef., Novakova, Olga

Inst : ..

Title : Properties of Scintillation Counters with NaI (Tl)
Crystals.

Orig Pub : Jaderna energie, 1958, 4, No 5, 122-127.

Abstract : Description of the basic parameters of scintillation
counters with NaI (Tl) crystals. The lengths and the
slope of the plateau are determined, along with the back-
ground, ratio of signal to background, resolving power,
and so on. The measurement was carried out with the pho-
tomultipliers RCA 5819 and FEU-19 with NaI (Tl) crystals
manufactured by the Institute of Electrotechnical Physics
in Prague.

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Scintillation probe with exchangeable scintillators for the
detection of α -, β -, and γ -radiation. Josef Silar (A.S.
Popov Research Inst., Communications Technol., Prague).
Jaderná Energie 5, 21-4 (1959).—A probe is described which
can be used with various scintillation detectors: ZnS(Ag)
for α -rays, a specially developed plastic scintillator for β -
rays, and NaI(Tl) for γ -rays. The special plastic consists of
polystyrene +1.8% p-terphenyl +0.01% NFO. The
characteristics of the scintillators are discussed. H. N.

11
Distr: 4E2c(j)/4E3c/4E3d

RM2 JF

2
2 May
3

SILAR, Josef

Large-area α -scintillation probe. Josef Silar and Jaroslav Smola (Research Inst. Commun. Technol., Prague). *Jaderná energie B*, 124-8/1985. — An instrument for controlling the α -contamination of lab. surfaces and clothing is described. The detector is a thin layer of ZnS(Ag). The photons from the large area of detector (7.7–10.5 cm. diam.) are led through a truncated cone of Umaplex (Czechoslovak Plexiglas) to the photocathode of a photomultiplier. An Al foil (1.71 mg./sq. cm. thick) screening the photocathode from daylight is placed in front of the detector; this decreases the sensitivity and the height of the impulses recorded; this in turn decreases the differences between signal and noise. The characteristics of the instrument was detd.

H. Newcombe

OK

5
4626
4630

SILAN, J.

Measurement of relative efficiency of scintillators by pulse methods. p. 309

JADERNA ENERGIE. (Ministerstvo energetiky)
Praha, Czechoslovakia Vol. 5, no. 9, Sept. 1959

Monthly List of East European Accession, (EAI), IC, Vol. 8, No. 12, Dec. 1959
Uncl.

SILAR, Josef

Scintillation detectors. Pokrcky mat fyz astr 5 no. 1:65-74. '60

1. Tesla-Liberec, Vyzkumny zavod Premysleni u Prahy.

80494

CZ/4-60-2-9/54

21.5200

AUTHOR:

Šilar, Josef

TITLE:

Scintillation Detectors and Their Application

PERIODICAL:

Nová Technika, 1960, No. 2, pp. 64 - 68

TEXT:

The author gives a general review on the application of scintillation detectors. The importance ascribed to these devices was shown in the lectures read at the Výzkumný závod Přemýšlení (Research Plant at Přemýšlení) and at the Conference of the Dosimetrická sekce VTS (Dosimetric Section of the Scientific-Technical Society) on May 22, 1959. Introductory, the author describes and gives a schematic diagram (Figure 1) of a scintillation detector, based on the suitable connection between a scintillator, a multiplier, a photo-cathode, an amplifier, a discriminator, and a registration device. A historical review follows, containing data on the development of scintillation detectors, of new luminescent materials used in detection of beta and gamma rays, of artificial naphtalene crystals, of anthracene crystals, of artificial anorganic crystals (for example, sodium iodide activated by thallium and cesium iodide), of a series of organic luminescent substances solved in organic liquids or in plastic substances. Parallel to this photo multipliers

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Scintillation Detectors and Their Application

were developed. A significant increase of the detecting efficiency at gamma radiation is the most important practical advantage of scintillation detectors; the efficiency is 30 - 60 times higher compared to the GM type counters. Photograph 2 shows a scintillation detector for gamma radiation, developed and produced by the Research Plant at Přemyslení. Scintillation detectors with a probe of high detecting efficiency for gamma radiation are applied in the following fields:

a) Observation of the function of the thyroid gland using the radioactive isotope iodine 131 (Photograph 3 shows the "Scintigram" of the distribution of radioactive iodine in a healthy thyroid gland (a) and in a thyroid gland with tubercular struma with hyperfunctional tubercle (b); b) Localization of cerebral tumors by means of diiodo fluorescein using a directional scintillation detector with a lead-covered probe (Figure 4 shows schematic sections of directional scintillation detectors equipped with a cylindrical opening (a), with a focusing arrangement (b), and with a conical opening (c)); c) Localization of metastasis in the case of thyroid gland cancer using radioactive iodine; d) Observation of the circulation of blood by means of radioactive sodium or chromium; e) Prospecting of uranium or thorium beds; f) Exploration of rock-compositions in the course of drilling activities; g) Prospecting crude oil etc. For the detection of extremely low gamma radiation scintillation detectors with large NaI (Tl) crystals have been

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developed, equipped with a cylindrical opening in the direction of the axle (Photograph 5 shows a so-called fountainous scintillation detector). A precise detection of gamma rays of a radioactivity of 10^{-10} Curie in one-minute measuring intervals is made possible; the device is applied in detecting the radioactivity of blood, urine etc. A description of various devices for the measuring of gamma radiation, developed at the laboratories of the Universities of Los Alamos and Harwell, follows. Small sized so-called needle-detectors are applied in the determination of mammary tumor, using radioactive phosphorus P-32. In addition scintillation detectors serve for the protection of workmen against alpha-radiation; in accordance with the regulations concerning working places exposed to radioactive substances the contamination of the 1st and 2nd class working places should not surmount the quantity of 23 disintegrations per min/cm². Large-area scintillation detectors are suitable for the testing of working places with regard to an alpha ray contamination; they are equipped with a zinc-sulphide layer activated by silver (see Photograph 6). So-called windowless scintillation detectors with a detecting efficiency of 50% are applied for detection and spectral analysis (see Photograph 7). Scintillation detectors are also used in detection of beta isotopes C-14, S-35, H-3. The photomultiplier's noise impulses, deteriorating the performance

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of the device, may be eliminated by cooling of the photo cathode, or by a coincident arrangement. Thus an effect of about 70% may be obtained detecting the isotope C-14, whilst the GM counter had a detection efficiency of some percents only. There are 2 diagrams, 5 photographs and 4 Czech references.

ASSOCIATION: Tesla-Liberec, Výzkumný závod Přemýšlení (Tesla-Liberec Plant,
Research Plant at Přemýšlení).

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SILAR, J.

"Particle detectors, counters and scintillators; mechanism
and construction" by D.Blanc, Reviewed by J.Silar. Jaderna
energie 6 no.7:238 J1 '66.

84640

9.6150
26.2190

Z/038/60/000/007/004/006
A201/A026

AUTHORS: Šilar, Josef; Pavlíček, Zdeněk

TITLE: Newly Developed ¹⁹GM Counter Types in the CSR

PERIODICAL: Jaderná energie, 1960, No. 7, pp. 240 - 243

TEXT: Until 1960, the Tesla National Enterprise in Vrchlabí produced the following GM counter types: GM 20/40 A for the detection of α -radiation; GM 30/50 B for the detection of β -radiation; GM 16/100 G for the detection of γ -radiation; GM 30/300 K and GM 40/600 K for the detection of cosmic radiation. In 1960, the following six new types were introduced: 1) GMT 30/30 AB; 2) 30/50 A (shown in Figure 1); 3) GMT 20/100 GW; 4) GMT 16/50 B1H (shown in Figure 2); 5) GMT 20/100 GH; 6) GMT 20/100 XH and GMT 20/100 X1H (shown in Figure 3). The meaning of the type designation is as follows: The first figure gives the cathode diameter in millimeters; the figure in the denominator gives the cathode length in millimeters; the letters indicate the type of radiation for the detection of which the particular counter is designed: A - for α -radiation; B - for β -radiation; G - for γ -radiation; K - for cosmic radiation; N - for neutron detection; X - for Roentgen radiation. The letter H in the last position indicates

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a halogen counter. If the letter indicating the type of radiation is followed by a figure (e.g. 1), it indicates a modification of the basic type. This modification usually consists in a different type of gas filling of the tube. The letter W means that the cathode is made of tungsten. The following are the specifications, description and use of the new GM counters: 1) GMT 30/30 AB is a high-voltage, bell-type tube with a mica front window. The tube is of glass protected by a PVC case, with a four-pin base. It is destined for low-level β and α -radiation measurement. Specifications: Filling - helium + organic quenching medium; threshold voltage - 1250 v; minimum plateau - 300 v; maximum relative plateau slope - 5% for 100 v; window mass - 1 - 2 mg/cm² (precise value will be stated in the testing report); background in Pb shield - maximum 30 pulses/min; Service life - 10⁸ pulses; effective range of the active region - 30 mm; cathode diameter - 30 mm; weight - 75 g; temperature range - from -10 to +30°C. This counter replaces the following counter types. VA-Z 310 (GDR), T 30 BFL 28 (USSR), and VAT-25 (Poland). The tube is filled to a pressure of about 700 mm Hg causing a dead time of about 300 - 400 μ sec. - 2) The 30/50 A counter is a high-voltage tube with a mica window, destined for use as a proportional counter for

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the detection of α -radiation with an energy of 3 Mev. It is insensitive to β - and γ -radiation. The tube is of glass, protected by a "novodur" case with a coaxial base. Specifications: Filling - neon + organic quenching medium; operating voltage - 1,200 v; minimum length of plateau at a 30 mv input sensitivity of the amplifier - 150 v; maximum relative plateau slope - 5% for 100 v; window mass - 1 - 2 mg/cm²; service life - 10⁹ pulses; window diameter - 30 mm; cathode diameter - 32 mm; length of the active region - 50 mm; overall length - 110 mm; temperature range - from -20 to +40°C. This counter is similar to the VA-2-520 counter, produced by the firm Vakutronik (GDR). - 3) GMT 20/100 GW is a high-voltage, all-glass tube with a tungsten cathode, enclosed in a metal case with a four-pin base. It is especially suitable for medical and technical applications. Its large overload capacity and long service life permit its use for long-term, high-level measurements. Specifications: Filling - argon + organic quenching vapors; threshold voltage - 1,100 v; minimum plateau - 200 v; maximum relative plateau slope - 5% for 100 v; background in Pb shield - 60 counts/min; background without shield - 200 counts/min; service life - 10⁸ counts; cathode diameter - 20 mm; effective length of the active region - 80 mm; overall length 150 mm; overall diameter - 25 mm; weight - 50 g. This counter replaces the

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G 10 Pb counter produced by the 20th Century Electronics and the ²⁸PC-13 and ²⁸BC-14 counters produced in the USSR. - 4) GMT 16/50 RH is a low-voltage, halogen tube of all-glass design meant for the detection of γ -radiation and hard β -radiation with an energy of 0.3 Mev. It is designed for use with portable, battery-fed indicators. The leads have the shape of end-caps. Specifications: Filling - neon + halogen; threshold voltage - 360 v; minimum plateau length - 100 v; maximum relative plateau slope - 12% for 100 v; background in a 5 cm Pb shield - 60 counts/min maximum; service life - 5.10⁹ counts; effective length of the active region - 50 mm; cathode diameter - 16 mm; overall length 92 \pm 2 mm; overall diameter - 16 \pm 1 mm; temperature range - from -40 to +50°C; wall mass - 75 mg/cm² maximum; weight - 6 g (Abstractor's note: Evidently a misprint). - 5) GMT 20/100 QH is a low-voltage, halogen tube of all-glass design, enclosed in a metal case with a four-pin base. It is designed for use with portable, battery-fed instruments and, owing to its high service life, it is especially suitable for long-term measurements of high level radiations within a wide temperature range. Specifications: Filling - neon + halogen; threshold voltage 400 v; minimum plateau length - 200 v; maximum relative plateau slope - 10%

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for 100 v; background in Pb shield - 60 counts/min; service life - $5 \cdot 10^9$ counts; effective length of the active region - 100 mm; cathode diameter - 20 mm; overall length - 170 mm; overall diameter - 25 mm; weight - 60 g. This tube is similar to the G5H and G10H counters produced by the 20th Century Electronics and to the MX 120/01 counter produced by Mullard. - 6) GMT 20/100 XH is a halogen tube of bell design with a front mica window of a mass $2 - 3 \text{ mg/cm}^2$. The glass tube is enclosed in a metal case with a four-pin base. It is meant for measurement of the Roentgen radiation within the wave range from 1.2 to 2.5 Å. Specifications: Filling - argon + halogen; threshold voltage - 1,050 v; minimum plateau length - 150 v; maximum relative plateau slope - 10% for 100 v; window mass - $2 - 3 \text{ mg/cm}^2$; background in Pb shield - 60 counts/min; service life - 10^9 counts; effective length of the active region - 100 mm; cathode diameter - 20 mm; overall length - 170 mm; overall diameter - 25 mm; weight - 50 g. This counter replaces the MX 118 counter produced by Mullard. - GMT 20/100 X1H has the same geometric and electrical parameters as the GMT 20/100 XH. The only difference lies in the gas filling. In order to achieve detecting capacity in the range of the wavelengths from 0.5 to 0.86 Å, this counter is filled with krypton and halo-

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gen gases. This tube replaces the MX 122 counter produced by Mullard. (Editor: O. Gilar). There are 3 photographs and 7 Czech references.

ASSOCIATION: Tesla-Liberec, výzkumný závod Přemýšlení u Prahy (Tesla-Liberec,
Research Plant "Přemýšlení" near Praha)

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89373

Z/038/60/000/011/002/006
A201/A026

11.5200

AUTHORS : Nováková, Olga; Šilar, Josef

TITLE. Detection of Extremely Low Gamma Activities With Scintillation De-

PERIODICAL: Jaderná energie, 1960, No. 11, pp. 365 - 378

TEXT: The article describes the basic parameters of scintillation detectors used for the detection of extremely low gamma activities. The most important prerequisites of such detectors are: (1) maximum sensitivity; (2) optimum geometric efficiency between the measured sample and the detection volume; (3) low background and minimum background fluctuation; (4) design that will permit measurements of samples with sufficiently large volume with good geometric efficiency. Furthermore, the detector sensitivity, detector sensitivity threshold, and factors influencing its long-term stability are defined, and the relations for the measurement-time calculation for a desired accuracy, for the evaluation of the detectors in relation to their low-gamma-activity measuring capability, and for the setting of the optimum detector parameters are derived on the grounds of statistical considerations. Four types of scintillation detectors for measuring liquid gamma

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sources are described, namely the well-type, ring-cell type, beaker-type, and immersion-type. Their respective schematic diagrams are shown in Figure 8. The well-type scintillation detectors feature the highest sensitivity and a nearly 4π -geometry. Their disadvantage is that the volume of the well restricts the volume of the measured samples to about 5 cm^3 . The ring-cell type detectors have a considerably poorer geometric efficiency, by their design permits measurements of samples up to 1 liter. Their disadvantage is also that the ring-cells have to be custom-made for each crystal and lead-shield size. The beaker-type has a still poorer geometric efficiency than the ring-cell type detector, but standard beakers can be used. Low, large-diameter crystals are best suitable for this type. The immersion-type detectors have a geometric efficiency similar to that of the ring-cell type and are especially suitable for measuring gamma activities in large water reservoirs. The Tesla-Liberec n.p. - Výzkumný závod (Tesla-Liberec, National Enterprise, Research Plant) in Přemýšlení has designed the following 4 types of low-activity scintillation detectors: (1) A well-type scintillation detector (Figure 9). It uses a probe with a 61 PK 411 photomultiplier tube and a cathode follower, both produced by the plant, and an NaI (Tl) crystal, 50 mm high, 45 mm in diameter with a well 37 mm deep, 19 mm diameter, capable of accomodating a 5 cm^3 -sam-

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Detection of Extremely Low Gamma Activities With Scintillation Detectors

ple. The probe is enclosed in a pear-shaped lead shield, which was originally designed for a directional scintillation counter also produced by the plant. The electronic part comprises a high-voltage power supply, a pulse amplifier, a discriminating circuit, and an evaluation unit. Samples are filled in mass-produced vials, which are then inserted into the crystal well. (2) A ring-cell type detector using a standard NaI (Tl) crystal, 25 mm high, 33mm in diameter, and an "Umaplex" ring-cell with a maximum capacity of 40 cm³. (3) A beaker-type detector (Fig. 15). It uses a standard NaI (Tl) crystal, 25 mm high, 38 mm in diameter. Standard "Sial 150" beakers are used which are placed directly on the scintillator. The lead shield, probe design and electronics are similar to those of the well-type detector. (4) A beaker-type detector with a large NaI (Tl) crystal (Fig. 16). It consists of a lead casing, 270 mm high, 45 mm thick, in which a probe is mounted with a 61 PK 421 photomultiplier and an NaI (Tl) crystal, 45 mm high, 90 mm in diameter, grown in the chemical section of the plant. Radioactive solutions are filled either into a mass-produced glass vessel, 120 mm in diameter, or into a 0.5 liter bottle, 80 mm in diameter. Use of 2,000 cm³ bottles is also possible. From theoretical analyses and from experimental results it can be stated that well-type scintillation detectors can detect a minimum total activity of the order of 10⁻¹²c,

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and the large-volume beaker-type detectors can detect specific activities as low as 10^{-13} c/cm³. These values were established in measurements of Fe-59, which emits 1 gamma-quantum per decay. In order to obtain accurate results for other sources the instruments will have to be calibrated according to the investigated sources. The sensitivity threshold of the scintillation detectors for the majority of radioactive sources lies below the permissible values set forth by the Czechoslovak standard ČSN 34 1730 from 1956, for the concentration of radioactive substances in drinking water. (Editors: I. Bučina, Z. Spurný) There are 3 photographs, 15 figures, 15 tables and 11 references: 2 Czech, 2 German and 7 English.

ASSOCIATION: Tesla Liberec, n.p. - Výzkumný závod (Tesla Liberec, National Enterprise, Research Plant) in Přemýšlení

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L 26374-65 EWT(m) IJP(c)
ACCESSION NR: AT4049964

Z/2511/61/000/001/0401/0406

AUTHOR: Silar, J. (~~Shilar, I.~~) (Prague); Novakova, O. (Prague); Smola, J. 18
(Smola, I.) (Prague) 7

19
TITLE: Detection of low alpha-radiation activity by scintillation detectors B+1

SOURCE: Prague. Ceske vysoke uceni technicke. Prace. Ser. 6, no. 1, pt. 2, 1961,
401-406

TOPIC TAGS: radiation detection, alpha radiation, scintillation detector,
natural radiation, zinc sulfide, decay series, uranium, thorium, uranium thorium
decay series, pulse counter, photomultiplier

ABSTRACT: A study was made of several types of developmental and commercial
powdered ZnS(Ag) produced in Czechoslovakia, and they were compared with samples
of ZnS(Ag) produced abroad with a view to finding a detector of low alpha-radia-
tion activity. A zinc sulfide with the lowest possible natural activity of alpha
radiation, which is obtained by a content of uranium, thorium, and the members
of their decay series, would be required. The parameters of scintillation detec-
tors for alpha radiation which were measured on the developmental samples or on

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ACCESSION NR: AT4049964

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samples from the verification series are given. The scintillation sondes were staged with type 61PK411 or type 61PK421 photomultipliers of VUVET, Prague, production. The estimates were made with a simple electronic device for scintillation detectors (of VZ-Industry production) and with a type ZVIL pulse counter. The background of the detector and the threshold sensitivity are given along with the properties of the α -detectors developed in Czechoslovakia. Orig. art. has: 4 tables and 1 formula.

ASSOCIATION: VZ-Premysleni (VZ Industry)

SUBMITTED: 00

ENCL: 00

SUB CODE: NP, EC

NO REF SOV: 000

OTHER: 001

Card 2/2

L 33933-65 EWT(m)/EWA(h)
ACCESSION NR: AT404996

Z/2511/61/000/001/0407/0412

AUTHOR: Novakova, O. (Prague); Silar, J. (Shilar, I.) (Prague)

TITLE: Detection of gamma and beta radiation of extremely low activity in liquid samples

SOURCE: Prague. Ceske vysoke uceni technicke. Prace. Ser. 6, no. 1, pt. 2, 1961, 407-412

TOPIC TAGS: dosimetry, gamma radiation, beta radiation, radiation detection, low activity radiation, specific activity, low energy radiation

ABSTRACT: The article reviews the requirements of a detector for accurate measurement of gamma and beta radiation of extremely low activity in liquid preparations. At the VZ Premysleni factory scintillation detectors have been developed for the measurement of samples of less than one-liter volume for gamma and beta radiation of medium and higher energies. On the basis of the results discussed and other experimental measurements made at the factory, it is concluded that scintillation detectors can be used for the direct detection of beta and gamma emitters of a specific activity of 10^{-9} c/l in liquid samples. The required accuracy, of course,

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ACCESSION NR: AT4049965

makes it necessary to lengthen the measurement time to the order of hours. The lowest measurable activity for both gamma and beta radiation is dependent on the type of isotope measured, i.e., on the energy of the measured radiation. Orig. art. has: 1 figure and 2 tables.

ASSOCIATION: VZ Pranyaleni

SUBMITTED: 00

ENCL: 00

SUB CODE: NP

NO REF SOV: 000

OTHER: 000

Card 2/2

SILAR, Josef; NOVAKOVA, Olga

Gamma single-crystal scintillation spectrometer, its parameters and use. Jaderna energie 9 no.6:190-199 Je '63.

1. Tesla Pardubice, Vyzkumny zavod Premysleni.

VANAG, G.Ya.; SILARAYA, R.Ia.

Interaction of the ethyl ester of chloroindandionecarboxylic acid
with primary amines. Zhur.ob.khim. 26 no.1:68-74 Ja '56.
(MLRA 9:5)

1. Latviyskiy gosudarstvennyy universitet.
(Indandionecarboxylic acid) (Amines)

SHIMADU, ROZAKI, et al. "Preservation and Staining of Coprologic Smears by the Polyvinyl-Alcohol-Trichrome Method."

"Preserving and Staining of Coprologic Smears by the Polyvinyl-Alcohol-Trichrome Method."

Bucharest, Microbiologia, Parazitologia, Epidemiologia, Vol 8, No 3, May-Jun 63, pp 259-265.

Abstract: Describes the two phases of the method, namely the preservation of the coprological material in a polyvinyl-alcohol fixator and its staining with trichrome. The materials and procedures used are discussed, and the advantages of the method are pointed out.

Includes 5 figures and 3 Western references.

1/1

SILAS, Gh.; KLEPP, H.; GLIGOR, T.

Some properties of some plane motions. Bul St si Tehn Tim
8 no.1:37-42 Ja-Je '63.

ALIAS, GR. BRINDEN, L.N.; GROSSE, I.

Permeation systems applied to rigid bodies in rotation.
Bul St si Tehn Tim 9 no.1:9-16 Ia-Je 1974.

STAS, G., BRINDEN, L.N., KLEPP, H.I.

Determining the conditions of contact with the friction of
elastic bodies having asymmetric profiles. Bul St si Tehn
Tim 9 no.1:17-22 Ja-Je '64.

SILAS, Gh.; PAUNESCU, M.; GROSANU, I.; BRINDEU, L.; GLIGOR, T.

Vibropercussor for driving elements into the ground. Bul Sti
si Tech Tim 9 no.2:321-329 J1-D '64.

SILAS, G.; BRUNDEU, L; KLEPP, H.

Percussions applied to the free rigid body. Bul St si Tehn Tim
9 no.2:331-340 JI-D '64.

MANGHANI, D.; SILAS, GH.; TUTUNARU, D.

Third International Conference on the Machine and Mechanism
Theory, September 4-8, 1963, Miskolc, Hungary. Studii cerc
mec apl 16 [i.e. 15] no.3:787-792 '64.

L 04878-67 ENP(w) LJP(c) EM/WW

ACC NR: AP6025069

SOURCE CODE: RU/0019/66/011/002/0539/0552

AUTHOR: Silas, Gh.; Klepp, H. J.

ORG: Technical University, Timisoara (Technische Hochschule)

TITLE: Approximation method for studying nonlinear conservative oscillations

SOURCE: Revue Roumaine des sciences techniques. Serie de mecanique appliquee, v. 11, no. 2, 1966, 539-552

TOPIC TAGS: oscillating system, free oscillation, nonlinear vibration, approximation method

ABSTRACT: An approximation method is proposed for studying oscillating systems that are described by the equation of motion $q + N(q) = 0$. In this method, the region of oscillations is divided into subregions, in each of which the nonlinear characteristic $N(q)$ is replaced by two bilinear characteristics. Properly selected, the latter form continuous polygons. The singular point of the bilinear characteristics in each subregion is determined from the condition that the three characteristics are equivalent in terms of energy. Application of the polygonal characteristics to the determination of the amplitude and period of oscillations is shown to provide excellent approximation of the exact value. The method is illustrated in application to systems

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having the polynomial characteristics $N(q) = \sum_{i=1}^n a_i q^i$ and $N(q) = \pm a_n |q|^n$. Orig. art. has:
4 tables and 26 formulas.

SUB CODE: 12,20/ SUBM DATE: 10May65/ ORIG REF: 002/ OTH REF: 006/
SOV REF: 009

rel
Card 2/2

SILASKI, R.
SURNAME (in Cyrillic); Given Names

Country: Yugoslavia

Academic Degrees: /not given/

Affiliation: Agricultural Enterprise (Poljoprivredno dobro), Vrsacki ritovi

Source: Belgrade, Veterinarski glasnik, No 6, 1961, pp 534-536.

Data: "Cases of Cannibalism in Fowl on the Farm of the Agricultural Enterprise "Vrsacki Ritovi"."

Authors:

SILASKI, R.
PAVLOVIC, R.

304

SILAVA, E.; PETERSONS, P., red.; DARZINA, V., tekhn. red.

[Fiftieth anniversary of the Bulduri Technical School of Fruit
and Vegetable Growing] Bulduru darzkopibas tehnikuma 50 gadu:
monografija. Riga, Latvijas Valsts izdevnieciba, 1960. 120 p.
(MIRA 14:12)

(Bulduri--Agricultural colleges)

SILAYENKOV
VOLZHENSKIY, A.V., prof.; MOCHALOV, A.I., inzh.; BUROV, Yu.S., kand.
tekhn.nauk; SILAYENKOV, Ye.S., inzh.

Autoclaved concrete made with metallurgical slag and ash binders.
Bet. i zhel. -bet. no.8:322-325 Ag '57. (MIRA 10:10)

1. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury (for
Volzhenskiy)

(Concrete)

SIKIN, V. Ye. S., Cand Tech Sci--(diss) "On the ¹⁷ of auto-
clay ~~concrete~~ ^{concrete} ~~on the~~ ^{on the} base of ~~autoclaved~~ ^{autoclaved} ~~concrete~~ ^{concrete} ~~slabs~~ ^{slabs}."
Mos, 1957. 17 p. (Acad of ~~Building~~ ^{Construction} and Architecture USSR. Sci Rep
Inst of Building Materials. Laboratory of Autoclay Silicate Materials),
see series (11,45-58, 149)

-16-

VOLZHENSKIY, A., doktor tekhn.nauk; SILAYENKOV, Ye., inzh.

Behavior of steel reinforcements in slag-sand concrete products.
Stroi.mat. 4 no.10:30-31 0 '58. (MIRA 11:11)

1. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury SSSR.
(for Volzhenskiy).
(Reinforced concrete)

VOLZHENSKIY, A.V.; SILAYENKOV, Ye.S., inzh.

Deformation of fine grained autoclave hardened concretes
caused by the change of their moisture content. Bet. i zhel.-
bet. no.4:175-179 Ap '59. (MIRA 12:6)

1. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury
SSSR (for Volzhenskiy).
(Concrete--Testing)

VOLZHENSKIY, A.V., prof.; SILAYENKOV, Ye.S., kand.tekhn.nauk;
KHARINA, T.V., inzh.

Resistance of autoclave-hardened slag-sand materials subjected to the action of corrosive media. Stroi.mat. 5
no.11:32-34 N '59. (MIRA 13:3)

1. Deyatvitel'nyy chlen Akademii stroitel'stva i arkhitektury
(for Volzhenskiy).
(Concrete--Corrosion)

SILAYENKOV, Ye.S., kand.tekhn.nauk; TIKHOMIROV, G.V., inzh.

Effect of carbonation on some properties of autoclaved concretes.
Stroi. mat. 7 no.4:30-33 Ap '61. (MIRA 14:5)
(Carbon dioxide) (Concrete)

SILAYENKOV, Ye., inzh.; TURKO, R., inzh.; GRISHKO, N., inzh.

Finishing panels of exterior walls made of cellular concretes.
Na stroi. Ros. no.10:33-34 0 '61. (MIRA 14:11)
(Concrete walls)
(Lightweight concrete)

SILAYENKOV, Ye.S., ~~kand.~~ tekhn. nauk

Evaluation of the durability of large elements made of autoclaved cellular concrete. Bet. i zhesl. bet. no. 11:501-504
N '61. (MIRA 16:8)

(Lightweight concrete)

PESHKOV, M., inzh.; SILAYENKOV, Ye., kand.tekhn.nauk; DESYATOV, V.,
arkhitekt; GRISHKO, N., inzh.

Factory finishing of panels made of cellular concretes. Zhil. stroi.
no.12:11-13 '61. (MIRA 15:2)
(Facades) (Lightweight concrete)

SILAYENKOV, Ye.S., kand.tekhn.nauk; ZARIN, R.A., inzh.

Condition of roofs of industrial buildings made of autoclaved
cellular concrete. Prom. stroi. 39 no.5:58-62 '61.

(MIRA 14:7)

(Roofs) (Lightweight concrete)

SILAYENKOV, Yevgeniy Semenovich, kand. tekhn. nauk; GRISHKO,
Nikolay Moiseyevich; TURKO, Rakhmil' Leybovich

[Finishing cellular concrete panels with stone grinding materials; practices of the Construction Research Institute of Sverdlovsk and the First Ural Combine for Reinforced Concrete Products and Elements of the "Ural Administration for Heavy Pipe Mill Construction" Trust] Otdelka paneli iz iacheistogo betona kamennymi droblennymi materialami; opyt NII po stroitel'stvu v g. Sverdlovsk i Pervoural'skogo kombinata zhelezobetonnykh izdelii i konstruktsii tresta "Uraltiazhtrubstroi." Moskva, Gosstroizdat, 1963. 25 p. (MIRA 17:9)

1. Akademiya stroitel'stva i arkhitektury SSSR. Nauchno-issledovatel'skiy institut organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu. 2. Rukovoditel' sektora krupnopanel'nogo stroitel'stva Nauchno-issledovatel'skogo instituta po stroitel'stvu v gorode Sverdlovsk (for Silayenkov). 3. Glavnyy tekhnolog sektora krupnopanel'nogo stroitel'stva Nauchno-issledovatel'skogo instituta po stroitel'stvu v gorode Sverdlovsk (for Grishko). 4. Direktor Pervoural'skogo kombinata zhelezobetonnykh izdeliy i konstruktsiy tresta "Uraltiazhtrubstroy" (for Turko).

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Behavior of steel reinforcement in cellular concrete roofs of
industrial buildings. Prom. stroi. 40 [i.e. 41] no.4:31-35
Ap '63. (MIRA 16:3)

(Roofing, Concrete) (Concrete reinforcement)

...CHAYENOV, Ye.S., kand. tekhn. nauk; TIKHOMIROV, G.V., inzh.; TAIKH, P.A.,
inzh.; SKORNIIEVA, T.A., inzh.

Service life of autoclaved cellular concrete in large products.

Sbor. trud. Sverd. nauch.-issl. inst. po stroi. no.10:109-134

'63.

(MIRA 17:10)

СИЛАНИИ, И.И., канд. техн. наук; ГИИ НИИ, С.В., инж.

Одобрение: 10:135-153

Сбор. инд. Сverd. nach.-issl. inst. po stroi. no.10:135-153

'63.

(MIRA 17:10)

SILAYANOV, Ye.B., kand. tekhn. nauk

[Durability of large products made of autoclaved cellular concrete] Dolgovechnost' krupnorazmernykh izdelii iz avtoklavnykh iacheistykh betonov. Moskva, Strelizdat, 1964. 116 p. (MIRA 17:9)

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1 povr. stroi. kon. no.2:137-152 '54. (MIRA 18:5)

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Casting large parts of marine engines. Mor.1 rech.flot 13 no.20-22 D '53.
(MLRA 6:12)

(Marine engines) (Iron founding)

SILAYEV, A.

ZHIKHAREV, D., inzhener; SILAYEV, A., kandidat tekhnicheskikh nauk.

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(Alloys) (Smelting furnaces)